

AMENDMENTS TO THE SPECIFICATION

Replace the paragraph at page 1, lines 7-19, with the following paragraph.

The invention relates to a method for the production of a monolithic multilayer actuator made of a piezoceramic or electrostrictive material, with the actuator being formed as a stack arrangement in a quasi mechanical series connection of a plurality of piezoplates by sintering of green foils, existing inner electrodes in the plate stack being routed to opposite outer surfaces of the stack, where they are connected in parallel by a basic metallic coating as well as an external contact of respective electrode groups ~~, according to the pre-characterising clause of Claim 1.~~ The invention also relates to a monolithic multilayer actuator made of a piezoceramic or electrostrictive material, with the actuator being a stack arrangement of piezoplates which comprises inner electrodes, a common basic metallic coating, as well as an electrical external contact ~~, according to the pre-characterising clause of Claim 13,~~ as well as to an external contact for a monolithic multilayer actuator made of a piezoceramic or electrostrictive material ~~according to the pre-characterising clause of Claim 21.~~

Replace the paragraph at page 2, line 33 to page 3, line 11 with the following paragraph.

JP 58-196077 discloses a multilayer actuator and a method for its manufacture, in which a plurality of slots with a depth of approx. 0.5 mm is formed into the actuator parallel to the inner electrodes along the actuator axis. Similar to the expansion joints which are known from other fields in the art, these slots ~~lead~~ lead to a reduction in stress concentrations and thus prevent an uncontrolled crack formation or a growth of the crack in the actuator structure. The fact, however, that these slots also reduce the load bearing cross-section of the actuator and at the same time the pressure load capacity of the actuator during operation is disadvantageous. In the cited example, the load bearing cross-section of the actuator is reduced to  $3 \times 3 \text{ mm}^2$  with a total cross-section of  $4 \times 4 \text{ mm}^2$ . The cited process by which the slots are formed by thermally decomposable layers on the green ceramic foils during sintering also indicates further problems which during sintering may lead to an uncontrolled crack growth as well, and which can be prevented only by special expensive configurations of the inner electrodes. As the cause for the crack formation during sintering, the inhomogeneous compaction of the green stack during compression is mentioned.

Delete the paragraph at page 4, lines 25-26.

Delete the paragraph at page 4, lines 28-30.

Delete the paragraph at page 4, lines 32-33.

Replace the paragraph at page 5, lines 1-9, with the following paragraph.

~~Upon consideration of the teaching which is concretely defined in the claims, the~~ The basic idea of the invention is to incorporate microdisturbances in the actuator structure along the actuator axis and essentially parallel to the inner electrodes in the area of the at least two opposite outer surfaces to which the inner electrodes are alternately brought out in such a manner that these act as crack sources located quasi at a pre-known site, with the crack growth being controllable. The external contact is formed in a manner known per se by means of a basic metallic coating in thick or thin film technology, with the electrode areas between the sites of the microdisturbances and potential cracks leading towards the outside being connected by an elongation-resistant second outer electrode.

Replace the paragraph at page 5, lines 11-15, with the following paragraph.

By the specific incorporation of structure impairments which act as potential crack source, any further crack formation can specifically be controlled. With a distance of the crack sources ranging from 1 to 4, preferably from 2 to 3 mm, the internal mechanical stresses are reduced in such a manner that in the portions between the crack sources ~~not~~ no further crack formation is observed, even at a cyclic load exceeding  $10^9$  cycles by far.

Replace the paragraph at page 10, lines 33-34, with the following paragraph.

On the other hand, however, a crack growth into the basic metallic coating occurs at a site 9, which in the most unfavourable case leads to ~~[[s]]~~ severance of the basic metallic coating 5.